

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Milwaukee Water Works, Milwaukee County,
For Authority to Increase Water Rates

Docket No. 3720-WR-107

REBUTTAL TESTIMONY OF PATRICK PLANTON
May 14, 2010

1 **Q. Please state your name and business address.**

2 A. My name is Patrick Planton. My business address is 425 West Water Street, Suite 300,
3 Appleton, Wisconsin, 54911.

4 **Q. Please state your occupation.**

5 A. I am Director of Water Services and a principal for the consulting engineering firm of Short
6 Elliott Hendrickson (SEH). I serve as a Director on the Board of Directors for SEH's
7 Design|Build subsidiary. I am the manager of SEH's Appleton Office.

8 **Q. Please describe your educational and professional history.**

9 A. In 1982, I received a Bachelor of Science Degree in Civil and Environmental Engineering
10 from the University of Wisconsin-Madison. In 1995, I received a Masters Degree in
11 Business Administration from the University of Wisconsin-Oshkosh. I have also completed
12 several graduate level civil engineering courses at UW-Madison.

13 I have worked in the civil engineering consulting business for 27 years; in Chicago,
14 Illinois between 1983-1987, and in Wisconsin since August 1987. In 1983, I accepted an
15 engineering position with Sargent & Lundy Engineers. In this position, I was involved in
16 completing structural engineering designs for the Byron and Braidwood nuclear power plant
17 projects for Commonwealth Edison electric utility company.

1 In 1987, I accepted a position as a drinking water engineer at the Wisconsin-based
2 consulting engineering company Donohue & Associates, Inc. In this position, I was directly
3 involved in the engineering design and management of numerous drinking water projects,
4 including groundwater supply, storage, treatment and distribution, utility master planning,
5 hydraulic computer modeling, supervisory control and data acquisition (SCADA) systems,
6 and utility rates and financial planning. I was promoted to Senior Project Manager of
7 drinking water projects in 1995, and Assistant Water Department Manager in 2000. In 1993,
8 Donohue was acquired by Waste Management Corporation and merged with Rust
9 Engineering. In 1998, Rust Engineering was purchased by Tyco Corporation and merged
10 with Earth Tech Inc. In the 15 years I worked for Donohue/Rust/Earth Tech, I worked
11 directly for dozens of public and investor-owned water utilities throughout the United States.

12 In 2002, I accepted a Senior Water Project Manager position with SEH. SEH is
13 headquartered out of Minneapolis, Minnesota, with 30 offices in 10 Midwestern and Rocky
14 Mountain states. SEH is an ENR Top 200 consulting engineering company, with over 650
15 engineers, architects, planners and scientists. In 2007, I was named as the Water
16 Engineering Practice Leader for SEH's East Region. In 2008, I was chosen as a Director for
17 the Board of SEH's wholly-owned subsidiary SEH Design|Build, and was also named as a
18 principal in the firm. In 2009, I was named as the Director of Water Services for the firm
19 and Water Practice Leader for SEH's Central Region, as well as Manager of the Appleton
20 Office.

21 I have attached a copy of my curriculum vitae to this testimony as Exhibit 2.1.

22 **Q. What other qualifications and experience do you have that makes you qualified to offer**
23 **testimony in this case?**

1 A. During my 15 years at Donohue/Rust/Earth Tech, and over the past 8 years at SEH, I have
2 been the recognized corporate expert in the field of water utility rates and financial planning.
3 I have completed many water utility rate and cost of service studies; prepared Wisconsin
4 PSC annual reports and rate case applications, as well as provided testimony at PSC rate case
5 public hearings on behalf of my municipal water utility clients. I have worked on water
6 utility rate projects in Wisconsin, Illinois, Minnesota and Indiana. Most of my water utility
7 rate projects have been with Wisconsin public water utilities. The largest water utility rate
8 study I worked on was for the City of Chicago in 1999. Since 1994, I have given 13
9 presentations on water utility rates at state and regional conferences in Wisconsin, Minnesota
10 and Illinois.

11 **Q. Have the wholesale customers authorized you to provide testimony on their behalf?**

12 A. Yes they have.

13 **Q. Have you reviewed the pre-filed direct testimony and exhibits submitted in this case,**
14 **including the cost of service study (COSS) prepared by Public Service Commission**
15 **staff?**

16 A. Yes I have.

17 **Q. What is the purpose of your testimony?**

18 A. I will address the following issues raised by the pre-filed direct testimony and exhibits:

19 (1) Cost allocation methodology for transmission and distribution mains;

20 (2) Customer contribution allocations for transmission and distribution mains;

21 (3) System demand ratios used for the 2007 and current rate cases;

22 (4) Cost implications of high rates of unaccounted-for water; and

23 (5) Changes in the allocation of public fire protections charges from the 2007 rate case to
24 this rate case.

1 **Q. What are your concerns regarding the pre-filed direct testimony and exhibits for this**
2 **rate case?**

3 A. The Public Service Commission of Wisconsin (PSC) has a very long history of processing
4 public water utility rate cases and recommending rate increases that are fair, reasonable and
5 non-discriminatory. This has been demonstrated in hundreds of Wisconsin public water
6 utility rate cases, including the previous Milwaukee Water Works rate cases, the most recent
7 being in 2007. The establishment of utility rates that are fair, reasonable and non-
8 discriminatory are a guiding principle of the AWWA M1 Manual on water rates and charges,
9 as well as a requirement of the Wisconsin state statutes (Wis. Stats. Ch. 196). Wisconsin
10 Statute, Section 196.60 prohibits discrimination among utility customers. No public utility
11 may charge to any person more or less compensation for any utility service rendered than it
12 charges to any other person for a like contemporaneous service.

13 In reviewing the exhibits and pre-filed testimony in this rate case, I have questions on
14 a number of issues that appear to render some of the recommendations as unfair, not
15 reasonable or discriminatory to the existing wholesale customers of Milwaukee Water Works
16 (MWW).

17 **Q. Please discuss your concerns regarding cost allocation methodology for transmission**
18 **and distribution mains in Exhibit 12.2.**

19 A. MWW Plant Account 343 includes the historical Transmission and Distribution Main cost.
20 Schedule 3 of the PSC COSS shows the 12/31/2009 balance of Account 343 for utility-
21 financed plant in service to be \$224,676,972, with 2010 Test Year normal additions of
22 \$6,750,000 and retirements of \$600,000, for a test year rate average balance of
23 \$227,751,972. (Exhibit 12.2, Schedule 3.)

1 For MWW's system, distribution mains are considered to be any pipe 12 inches in
2 diameter or less; transmission mains are considered to be any pipe greater than 12 inches in
3 diameter. (D.12.11, lines 9-10.) Schedule 5 of the COSS breaks down Account 343 into
4 separate Transmission Main and Distribution Main accounts for utility-financed plant.
5 (Exhibit 12.2, Schedule 5.) This breakdown in transmission vs. distribution main cost is very
6 relevant to the wholesale customers because wholesale customers share in the costs related to
7 transmission mains, but do not share in the costs related to distribution mains.

8 According to the pre-filed testimony of PSC Rate Analyst Andrew Behm, the total in
9 Account 343 (\$224,676,972) was allocated between distribution main and transmission main
10 using a formula which takes into account the length and diameter of the different size MWW
11 water mains. (D12.11, lines 12-14.) The 2010 COSS did not allocate between distribution
12 main and transmission main using Milwaukee's actual financial information on the dollar
13 value of distribution and transmission main infrastructure. Based upon the formula used by
14 the PSC, \$120,927,295 (53%) of Account 343 was allocated to transmission mains and
15 \$106,824,677 (47%) was allocated to distribution mains. (Exhibit 12.2, Schedule 5.)

16 This breakdown between transmission vs. distribution mains and the resulting cost of
17 service allocations is substantially different than the allocation in the PSC's 2007 COSS for
18 MWW. In the 2007 COSS, Schedule 1, \$77,826,315 (40%) of Account 343 was allocated to
19 transmission mains and \$117,520,860 (60%) was allocated to distribution mains.
20 (Exhibit 2.2, Schedule 1.) It is my understanding from PSC staff that the 2007 allocation
21 was based upon MWW's actual financial information on the dollar value of distribution and
22 transmission main assets.

23 After receipt of the PSC's 2010 COSS, MWW's attorney was asked to provide the
24 wholesale customers with MWW's actual financial information on the historical dollar value

1 of installed water mains. The information MWW provided was based upon total plant in
2 service, as opposed to utility-financed plant which is what is allocated in Schedule 5.
3 According to the MWW information, the original asset value of transmission mains is
4 \$88,476,000, and the original asset value of distribution mains is approximately
5 \$207,634,000. (Exhibit 2.3.) This means that based upon MWW's information, 30% of total
6 distribution and transmission main original cost is allocable to transmission mains, and 70%
7 to distribution mains.

8 This large disparity between MWW's actual financial information and the allocation
9 used in the PSC's 2010 COSS have been brought to the attention of PSC staff, and Mr. Behm
10 has indicated in his testimony that he will revise the PSC's COSS to use Milwaukee's actual
11 financial information on the dollar value of distribution and transmission main assets if PSC
12 staff is able to verify that information. (D12.13, lines 7-11.). Since filing his testimony,
13 Mr. Behm has requested additional information from Milwaukee and Milwaukee has
14 confirmed that the information provided above is correct with the addition that there is also
15 \$3 million in station mains, and that contributed plant related to mains is \$73,474,000.
16 (Exhibit 2.3.)

17 **Q. Are the wholesale customers seeking a change in the cost allocation methodology for**
18 **transmission and distribution mains currently shown in Exhibit 12.2?**

19 A. Yes. The wholesale customers request that PSC staff revise the MWW COSS with the actual
20 plant in service values obtained from MWW for transmission mains and distribution mains.
21 It is my understanding from Mr. Behm's testimony that this will be done.

22 **Q. Will revising the MWW COSS with the actual plant in service values obtained from**
23 **MWW for transmission and distribution mains impact the rate increase to wholesale**
24 **customers?**

1 A. Yes. If the actual transmission and distribution asset values are used in the COSS, I
2 anticipate this revision to result in a significant reduction in the revenue requirement sought
3 to be recovered from the wholesale customers. This is because the dollar value of the utility-
4 financed plant and total plant serving the wholesale customers would be lower, and as a
5 result the allocated service costs (depreciation, payment in lieu of taxes, and return on the net
6 investment rate base [NIRB]) to the wholesale customers would all be lower. Based upon
7 the cost of service analysis I have performed, I anticipate that this revision would reduce the
8 overall allocated cost of service to wholesale customers by over \$500,000.

9 **Q. How did you perform a cost of service analysis for this rate case?**

10 A. In preparing the COSS for water utility rate cases, the PSC staff typically uses a cost-of-
11 service spreadsheet program that produces the 12 schedules shown in Exhibit 12.2.
12 Following receipt and review of Exhibit 12.2, I had Attorney Kobza ask PSC Staff if they
13 would provide the spreadsheet program file for this rate case to the wholesale customers.
14 Having access to the program would give the wholesale customers a much greater
15 understanding of the cost allocation methodology used by PSC staff in this very complex rate
16 case that involves numerous urban and suburban retail customers, as well as ten wholesale
17 customers. In the event that PSC would not share the cost-of-service program used for this
18 rate case, I asked Attorney Kobza to inquire if the PSC rate staff would be willing to run the
19 COSS spreadsheet program with several alternative cost allocation scenarios. PSC's
20 attorney indicated that the PSC would not provide the wholesale customers with the
21 spreadsheet program, and would not be willing to run alternative scenarios.

22 Without access to the PSC COSS spreadsheet program that was used to create
23 Exhibit 12.2 or a comparable program, it is virtually impossible to provide meaningful
24 comments regarding the cost-of-service methodology used by PSC or the appropriateness of

1 the recommended service cost allocations to MWW's customer classes. Without access to
2 the program, I created a replica cost-of-service spreadsheet program that was calibrated to
3 produce the same results as PSC's Exhibit 12.2. This replicated program was used to
4 estimate the impacts to cost of service allocations changes to all MWW's customer classes,
5 including the wholesale customers. Many of the exhibits contained in my testimony, and the
6 testimony of Eric Rothstein are the result of different runs of the replicated COSS
7 spreadsheet program using alternative input data.

8 **Q. Please discuss your concerns regarding the allocation of customer contribution between**
9 **transmission and distribution mains.**

10 A. PSC staff changed the way they handled the allocation of customer contributions (CIAC)
11 between transmission and distribution main plant accounts in this case, as compared to the
12 2007 MWW rate case. In Mr. Behm's pre-filed testimony, he indicates the following: "*In*
13 *the present case, I have divided the utility financed balance in Account 343 between*
14 *transmission and distribution based on the assumption that customer contributions only fund*
15 *distribution main. Because of this assumption the utility financed transmission balance*
16 *equals the total plant transmission balance. The remaining utility financed plant balance is*
17 *allocated to distribution. This is a change from the previous rate case, which assumed*
18 *customer contributions funded both distribution and transmission mains in an equal*
19 *proportion.*" (D12.12, lines 6-12.)

20 After receipt of Mr. Behm's testimony, Attorney Kobza requested MWW's attorney
21 to provide the wholesale customers with MWW's actual financial information concerning
22 historical CIAC based on water main sizes. MWW was able to provide a breakdown of
23 CIAC between transmission and distribution mains since 2003. (Exhibit 2.4.) Based on

1 MWW's CIAC financial information on its water main infrastructure since 2003,
2 29.3 percent of customer CIAC funded transmission main project costs. (Exhibit 2.5.)

3 While customer CIAC typically finances distribution mains in greater proportion than
4 transmission mains, MWW's actual data shows that almost 30 percent of MWW's CIAC
5 since 2003 was used to finance transmission main improvements. Therefore, I cannot
6 support the assertion PSC makes that MWW's CIAC funds only distribution mains.

7 **Q. Are the wholesale customers seeking a change in the apportionment of customer**
8 **contribution between transmission and distribution mains currently shown in**
9 **Exhibit 12.2?**

10 A. Yes. The wholesale customers request that PSC staff revise the MWW COSS based upon
11 the actual financial information obtained from MWW for customer contributions related to
12 transmission mains and distribution mains. To be consistent with the information provided
13 by MWW, the wholesale customers request that PSC staff revise the MWW COSS by
14 apportioning a minimum of 29.3 percent of MWW's historical CIAC value to the
15 transmission main plant in service account.

16 **Q. Will revising the MWW COSS with MWW's available actual financial information**
17 **regarding the plant-in-service value and customer contributions related to transmission**
18 **mains and distribution mains impact the projected service cost increase to wholesale**
19 **customers?**

20 A. Yes. Under the PSC COSS Schedule 5A, all of the historical MWW CIAC included in the
21 COSS has been apportioned to the Account 343 Distribution Mains category. If CIAC
22 funding is instead apportioned between transmission vs. distribution mains based upon
23 MWW's actual data, this revision will result in a significant reduction in the revenue
24 requirement sought to be recovered from the wholesale customers. Similar to my first issue

discussed above, this too is because the dollar value of the utility-financed plant serving the wholesale customers would be lower, and as a result the allocated service costs (depreciation, payment in lieu of taxes, and return on the NIRB) to the wholesale customers would all be lower.

Based upon the cost of service analysis I have performed, I anticipate that the correct transmission vs. distribution main plant value apportionment and the CIAC apportionment revision would reduce the overall allocated cost of service to wholesale customers by almost \$800,000, or a reduction in the cost of service increase of approximately 8 percentage points (Exhibit 2.6).

All subsequent cost-of-service analyses submitted with my testimony or Eric Rothstein's testimony will include this revised apportionment of water main plant and CIAC values.

Q. Please discuss your concerns regarding the demand ratios used for the 2007 and current rate cases.

A. PSC Staff has made a significant and material change in the determination of the MWW system demand ratios used for the current rate case as compared to the demand factors used in the PSC's COSS for MWW's 2007 rate case. MWW system demand ratios used in the 2007 rate case were as follows:

- Base = 52%; Extra Capacity Maximum-Day = 48%
- Base = 35%; Extra Capacity Maximum-Hour = 65%

(Exhibit 2.2, Schedule 1.)

In contrast, MWW system demand ratios used in the current rate case are as follows:

- Base = 71%; Extra Capacity Maximum-Day = 29%
- Base = 59%; Extra Capacity Maximum-Hour = 41%

1 (Exhibit 12.2, Schedule 4.)

2 This change in the determination of MWW system demand ratios has a very large
3 impact on wholesale customers, as the wholesale customers get allocated a lower proportion
4 of extra capacity costs compared to other customer groups.

5 In determining the 2010 MWW system demand factors, Mr. Behm indicates the
6 following: *“In developing the ratios, I looked at data supplied by MWW (PSC REF#:
7 129690). The average ratio of maximum day to average day from 2004 through 2009 is
8 1.43, and the average ratio of maximum hour to average hour is 1.73. I used the slightly
9 lower values of 1.4 and 1.7 to recognize the prevailing downward trend since 2003.”*

10 (D12.8, lines 21-23, to D12.9, lines 1.2.) Mr. Behm also goes on to state the following:

11 *“Basing ratios on more recent history allows the model to better reflect demands currently
12 experienced by MWW and to more accurately capture those demands in the cost of service.”*

13 (D12.9, lines 20-22.)

14 Over the most recent 6-year period (2003-2009), MWW’s ratio of maximum day
15 pumpage to average day pumpage has ranged between a low of 1.32 and a high of 1.72, with
16 a mean of 1.48. (Exhibit 2.7). PSC’s methodology suggests that this mean maximum day to
17 average day ratio should be used in determining MWW’s system demand ratios for this rate
18 case. However, PSC’s COSS suggests using a value (1.4) that is 6 percent lower than the
19 most recent historical MWW value (1.48), and does not take into account any historical
20 annual fluctuations suggested by the data. The standard deviation of MWW’s maximum to
21 average day pumpage over this same 6 year period was 13 percent. The standard deviation
22 for the most recent 13 year period was 11 percent.

23 In using a value less than the 6 year mean, it can be assumed there is a greater than
24 50 percent probability that in any given future year that this value would be exceeded. This

1 analysis suggests that PSC's estimated 1.4 maximum-to-average day pumpage ratio is too
2 low, does not take into account expected seasonal fluctuations, and would not be applicable
3 in estimating MWW's future extra capacity water supply needs.

4 In my experience, rather than use an average, a much more useful approach to
5 estimating future maximum-to-average day pumpage ratios for public water systems is to use
6 a statistical analysis. Historical ratios of maximum-to-average day pumpage often follow a
7 normal distribution; the greater the historical data set, the more closely the values reflect this
8 statistical distribution. A more reasonable approach to assigning MWW system demand
9 ratios would be to use a statistical analysis of available recent historical MWW demand
10 ratios.

11 The maximum-to-average day pumpage ratio used should provide a confidence
12 probability level much greater than under 50 percent. For projecting future maximum day
13 pumpages, I typically use a confidence probability level of at least 90 percent, assuming
14 historical system demand ratios generally follow a normal distribution. A minimum
15 confidence probability level of 90 percent would assume that the probability of the
16 maximum-to-average day pumpage ratio being exceeded would be once out of every ten
17 years. A 95 percent confidence level would assume that the chances of the maximum-to-
18 average day pumpage ratio being exceeded would be one year out of every 20.

19 The 90 percent confidence level of MWW's maximum-to-average day ratios over the
20 13 year 1997-2009 period is 1.61. (Exhibit 2.8.) Statistically speaking, this would mean that
21 there is a 1 in 10 chance that MWW's 2010 Test Year max-to-average day pumpage ratio
22 would exceed 1.61 based on the most recent 13 years of data. Conversely, there would be a
23 9 in 10 chance that the max-to-average day pumpage ratio would be less than 1.61. Note that
24 using the most recent 6 years of data suggests that the 90 percent confidence level would be

1 even higher (1.64). I believe this approach more accurately reflects the maximum day
2 system demand ratio for MWW than the approach PSC used in 2007 or for the current rate
3 case.

4 If a 1.61 maximum-to-average day demand ratio is used, the MWW system demand
5 ratios that would be used in Schedule 4 of the COSS would be as follows:

- 6 • Base = 62%; Extra Capacity Maximum-Day = 38%
- 7 • Base = 51%; Extra Capacity Maximum-Hour = 49% (assumes the same maximum
8 hour factor as PSC in Schedule 4 (1.21))

9 I believe these ratios are much more representative of the future ratios that MWW
10 should anticipate given the variability of the historical data.

11 **Q. Are the demand ratios used for the current MWW rate cases unreasonable and**
12 **discriminatory to the wholesale customers?**

13 A. Yes. I agree that current historical data should be used in determining MWW system
14 demand ratios, but the ratios to be used should reflect the statistically expected
15 fluctuations suggested by the historical data. Using a maximum-to-average day pumpage
16 ratio less than the 2003-2009 mean value is not reasonable, nor is it reasonable to ignore
17 the anticipated future fluctuations the recent historical data suggests.

18 Using the lower maximum-to-average day pumpage ratio in the COSS analysis
19 does impact the wholesale customers more than the retail customers, suggesting that the
20 use of a lower ratio is discriminatory to the wholesale customers. Using my cost-of-
21 service program, I anticipate that using the 2010 COSS service system demand ratios
22 suggested by PSC would allocate more than \$400,000 in additional allocated service
23 costs to the wholesale customers over the PSC's 2007 COSS system demand ratios.

1 **Q. What would you suggest as a reasonable value for the MWW ratio for maximum-to-**
2 **average day pumpage in determining service costs?**

3 A. I would recommend using a statistical analysis of recent maximum-to-average day ratios
4 for MWW. The most recent 6 years of data suggest a value higher than is used in PSC
5 COSS, Schedule 4, especially given the data's standard deviation. I would recommend a
6 maximum-to-average day pumpage ratio of 1.6 be used. This is much lower than the 1.9
7 value used in the MWW 2007 rate case, but higher than the 1.4 value recommended in
8 Schedule 4 of the COSS in this rate case. It is anticipated that using a maximum-to-
9 average day pumpage ratio of 1.6 (equating to a base-to-max day system demand ratio of
10 62%-38%) would result in a reduced allocation of more than \$200,000 to the wholesale
11 customers over the PSC's 2010 COSS system demand ratios. (Exhibit 2.9.)

12 **Q. Would using a lower base-maximum day system demand ratio also be consistent with**
13 **PSC's methodology to "temper" any large rate impacts over PSC's changes from the**
14 **2007 rate case?**

15 A. Yes. This very large system demand ratio change has a very significant impact to
16 customers with lower individual demand peaking factors (e.g., urban industrial and
17 wholesale customers). In his pre-filed testimony PSC rate analyst David Prochaska states
18 the following: *"The general approach used in this proceeding is to use the cost of*
19 *service study as a starting point to design rates to match the cost of providing service.*
20 *Another factor to consider is continuity with present rates. As shown on Schedules 11*
21 *and 11A of Exhibit 12.2, the cost of service study results show a relatively wide range of*
22 *increases in the charges to the various customer classes. I am recommending rates that*
23 *move substantially in the direction of the cost of service. I also recommend that any*
24 *further movement necessary in that direction be made in subsequent rate proceedings. In*

1 *moving toward the cost of service in recommended rates, I have done some tempering of*
2 *the rate increases to customer classes within some of the classifications of service that,*
3 *according to the cost of service study, should receive the largest percentage increases.*
4 *Where tempering is done, the resulting revenue difference is recovered through rates to*
5 *the remaining customer classes within the classification. I would add that the percentage*
6 *rate increase to any individual customer would not necessarily equal the overall increase*
7 *to the associated customer class, but would depend on the specific usage level of that*
8 *customer.” (D12.26, lines 6-20.)*

9 I agree with Mr. Prochaska’s recommendation that water rates move in the
10 direction that reflects the service costs to MWW’s customer classes. Furthermore, I
11 agree that there should be some tempering of the rate increases to customer classes within
12 some of the classifications of service that, according to the cost of service study, should
13 receive the largest percentage increases.

14 If my recommendation to use a maximum-to-average day pumpage ratio of 1.6 is
15 not accepted, then I recommend that the 37 percent increase in MWW’s base-max day
16 system demand ratio (52% increased to 71.4%) over the 2007 value to the system
17 demand ratio be “tempered” as suggested in Mr. Prochaska’s testimony in regard to
18 overall rate increases to MWW’s customer classes. Tempering this large increase in the
19 demand ratio is fair, reasonable, and non-discriminatory to MWW’s large urban
20 industrial and wholesale customers.

21 **Q. Please discuss your concerns regarding Milwaukee's unaccounted-for water.**

22 A. Large percentages of unaccounted-for, or non-revenue water, have cost of service
23 implications. The historical benchmark for unaccounted-for water percentages for large
24 (Class AB) water utilities in Wisconsin is 10 percent. PSC requires all large water utilities to

comment in their annual reports if the percentage of unaccounted-for water exceeds 15 percent. PSC requires large utilities to note what activities they have taken to address the elevated level of unaccounted-for water.

While MWW has not exceeded the 15 percent unaccounted-for water percentage threshold over the last 13 years based upon my review of MWW's annual report data, MWW has consistently had levels of unaccounted-for water in excess of the statewide 10 percent benchmark. In fact, only once in the previous 13 years has MWW had unaccounted-for water levels below the 10 percent benchmark. (Exhibit 2.10.) In addition, MWW has had an increasing trend of unaccounted-for water since 2004, which appears to now have stabilized at approximately 14 percent.

High levels of unaccounted-for water increase utility operating variable costs; specifically purchased power for pumping and treatment costs (chemicals).

Q. What are the cost implications of Milwaukee's high unaccounted-for water to the wholesale customers?

A. With more operating expenses being shifted by PSC to the base cost service function for this rate case, the wholesale customers are now being allocated a much greater share of operating service costs than in 2007. Per PSC COSS, Schedule 7, 100 percent of Test Year cost of purchased power for pumping and chemicals is allocated to base costs, which include operating variable costs associate with the production of non-revenue water (Exhibit 12.2, Schedule 7). Wholesale customers will now be sharing in a greater percentage of these costs, with no means to control or reduce the elevated level of non-revenue water produced every year by MWW.

Q. Is it reasonable for the wholesale customers to share in the increased variable costs resulting from MWW's unaccounted-for water?

1 A. No. Typically a much larger percentage of unaccounted-for water is generated within a
2 utility's distribution system, than in a utility's transmission main system. Unaccounted-for
3 water that is created through distribution system leaks is also often at customer services,
4 hydrants, and other connections to distribution mains.

5 Wholesale customers individually have to address unaccounted-for water in their own
6 water systems. The wholesale customers should not also be required to bear the costs for the
7 unaccounted-for water from MWW's distribution system.

8 As a whole, MWW's wholesale customers have done an excellent job of minimizing
9 their levels of unaccounted-for water. Based on 2009 operating data from the wholesale
10 customers' PSC annual reports, the wholesale customers' unaccounted-for water totaled
11 1.8 million gallons per day (mgd) out of a combined total average daily pumpage of 22 mgd
12 (8.3 percent). (Exhibit 2.11.) This is in contrast to MWW which could not account for
13 15 mgd out of an average daily pumpage of 108 mgd (14 percent). The amount of
14 unaccounted-for water produced by MWW in 2009 would serve the daily needs of West
15 Allis, Wauwatosa, Menomonee Falls and Mequon combined. As a group, the wholesale
16 customers' unaccounted-for water is almost 2 percentage points lower than the statewide
17 benchmark average for large Wisconsin water utilities.

18 **Q. What relief are the wholesale customers seeking from the Commission related to**
19 **MWW's unaccounted-for water?**

20 A. The wholesale customers request that the costs for MWW to pump, treat and distribute
21 unaccounted-for water above the 10 percent benchmark value be apportioned to retail
22 customers only. I estimate that the added variable costs incurred by MWW for having
23 unaccounted-for water above the 10 percent benchmark results in more than \$100,000 in
24 service costs allocated to the wholesale customers. PSC should reduce the allocated service

1 costs to wholesale customers by this amount in its proposed rate design, providing an
2 additional financial incentive to MWW to proactively address the elevated levels of non-
3 revenue water that is treated and pumped every year. (Exhibit 2.11.)

4 **Q. Please discuss your concerns regarding the allocation of public fire protections charges**
5 **in this case.**

6 A. PSC Staff has changed its method of allocating public fire protection costs between
7 customers. In 2007, after allocating service costs to public fire protection on a system or
8 class basis, the public fire protection service costs were then allocated to the various
9 communities. The factors used in the 2007 allocation included fire flow demands,
10 distribution mains, and hydrants. The public fire protection methodology used in the current
11 rate case is significantly different.

12 In Mr. Behm's pre-filed testimony, he indicates that: *"Indirect fire protection costs,*
13 *i.e. base and extra capacity costs associated with the provision of water for public fire*
14 *protection, are allocated to all retail and wholesale classes in proportion to their estimated*
15 *fire flows."* (D12.19, lines 20-22.)

16 **Q. Do you have any concerns with the PSC Staff's proposed allocation of public fire**
17 **protection costs?**

18 A. Yes. The PSC's COSS, Schedule 11A, allocates public fire protection costs among the
19 various customer classes (Exhibit 12.2, Schedule 11A). However, in Schedule 11A, PSC
20 Staff allocates not only a portion of the system base and system extra-capacity costs to the
21 wholesale customers, they also allocate distribution system costs to the wholesale customers.

22 This allocation of public fire protection costs related to the distribution system is a
23 change for the 2007 COSS. In the 2007 COSS, base and extra-capacity distribution costs

1 were not allocated to the wholesale customers (with the exception of a small allocation to
2 Wauwatosa). (Exhibit 2.2, Schedule 10, Notes 3, 4.)

3 This allocation of public fire protection costs related to the distribution system costs
4 to the wholesale customer is also inconsistent with the PSC's recognition that the wholesale
5 customers do not benefit from MWW's distribution system. Mr. Behm testified with regard
6 to the allocation of costs that: "*Base distribution costs are not allocated to West Milwaukee*
7 *or wholesale customers because they do not benefit from the MWW distribution system.*"
8 (D.12.15, lines 16-17.) He also testified that max day distribution costs, and max hour
9 distribution costs are not allocated to the wholesale customers. (D.12.16, lines 1 and 5.)
10 Storage costs are also not allocated to wholesale customers with the exception of Mequon
11 and Shorewood. (D.12.16, lines 6-7.)

12 **Q. What relief are the wholesale customers seeking from the Commission related to the**
13 **allocation of public fire protections charges?**

14 A. PSC should revise its COSS results by reallocating the indirect public fire protection costs
15 that relate to distribution or maximum-hour storage to the appropriate retail customers that
16 generate this service cost. Indirect public fire protection service costs that relate to MWW's
17 distribution system infrastructure or maximum hour storage facilities (with the exception of
18 Shorewood and Mequon) should not be allocated to wholesale customers. My cost-of-
19 service model suggests that the reallocation of these indirect public fire protection costs
20 would reduce the cost of service allocated to the wholesale customers by more than
21 \$450,000. (Exhibit 2.13.)

22 **Q. Are the opinions you express in this testimony to a reasonable degree of professional**
23 **certainty?**

24 A. Yes.

1 **Q.** **Does this conclude your pre-filed testimony?**

2 **A.** **Yes.**

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